

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

PARKERVISION, INC.,

Plaintiff,

v.

MEDIATEK INC. AND MEDIATEK USA
INC.,

Defendants.

Case No. 6:22-cv-01163-ADA

JURY TRIAL DEMANDED

**PLAINTIFF PARKERVISION, INC.'S
RESPONSIVE CLAIM CONSTRUCTION BRIEF**

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Exhibit 1	6:20-cv-00108-ADA – <i>Parkervision, Inc. v. Intel Corporation</i> - ParkerVision’s Opening Claim Construction Brief
Exhibit 2	6:20-cv-00870-ADA - <i>ParkerVision Inc. v. Hisense Co., Ltd. et al.</i> – ParkerVision’s Responsive Claim Construction Brief
Exhibit 3	6:20-cv-00945-ADA – <i>ParkerVision Inc. v. TCL Industries Holdings Co., et al.</i> – ParkerVision’s Responsive Claim Construction Brief
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I. INTRODUCTION

MediaTek asks this Court to reconsider claim constructions that this Court has construed *multiple* times in ParkerVision’s litigations with Intel, TCL, Hisense, and LG: storage element/module/device, switch, harmonic(s) and under-sampling. Each time, the Court has consistently maintained its constructions. And the Court should continue to maintain its constructions.

MediaTek merely reiterates the exact same arguments this Court has heard (and rejected) so many times before. It does not provide any basis showing that the Court made a mistake.

MediaTek seeks constructions that *ignore* the intrinsic record, *exclude* disclosed embodiments, and avoid reading the claims in view of the specification. With regard to the *nine* terms that MediaTek asserts are indefinite, MediaTek ignores the disclosures in the specification regarding the claimed technology. ParkerVision’s constructions should be adopted, and MediaTek’s constructions and indefiniteness arguments should be rejected.

II. TECHNOLOGY BACKGROUND

On multiple occasions, the Court has considered the cellular/wireless technology set forth in the patents-in-suit.¹ As such, ParkerVision does not repeat its discussion of the technology herein. These discussions are set forth in ParkerVision’s Opening Claim Construction Brief in Case No. 6:20-cv-00108 and ParkerVision’s Responsive Claim Construction Brief (and accompanying Expert Declaration) in Case Nos. 6:20-cv-00870, 6:20-cv-00945. *See* Ex. 1 (“PV 108 Op. Br.”) at Sections II, III; Ex. 2 (“PV 870 Op. Br.”) at Sections II, III; Ex. 3 (“PV 945 Op. Br.”) at Sections II, III; Ex. 4 (“Steer 870 Decl.”); Ex. 5 (“Steer 945 Decl.”).

¹ The patents-in-suit in this case are U.S. Patent Nos. 6,049, 706 (“the ’706 patent”); 6,266,518 (“the ’518 patent”); 7,292,835 (“the ’835 patent”); and 8,660,513 (“the ’513 patent”).

III. TERMS PREVIOUSLY CONSTRUED

A. “storage element”; “storage module”; “storage device” (’835 patent, claims, 1, 3, 4, 18, 20; ’513 patent, claim 19; ’518, claim 16)

ParkerVision’s Construction	MediaTek’s Construction
“[an element/a module/a device] of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal”	“a [device / module / element] that stores non-negligible amounts of energy from an input electromagnetic signal”

This Court has, on multiple occasions, construed “storage” element/module/device as “[an element/a module/a device] *of an energy transfer system* that stores non-negligible amounts of energy from an input electromagnetic signal.” *See* D.I. 46-8 (“108 CC Order”) at 5-6; D.I. 46-9 (“Amended 562 CC Order”) at 3; D.I. 46-11 (“Special Master’s Rec.”) at 29-34; D.I. 46-10 (“520 CC Order”) at 13-20. Each time, the defendants repeated the same basic arguments.

Now, with all arguments exhausted, MediaTek stretches to find something new to say. So MediaTek raises the PTAB’s Final Written Decision (FWD) in an IPR for the ’835 patent. *See* D.I. 45 (“Op. Br.”) at 6-7 (citing D.I. 46-12 (“’835 FWD”)). But the FWD in the ’835 patent IPR cites to (and is based on) the FWD in the ’444 patent IPR – the opinions/arguments in those IPRs related to the “storage” terms are the same. And Judge Gilliland already considered the PTAB’s opinions in the ’444 patent IPR and *rejected* them. *See* 520 CC Order at 14-20. MediaTek’s attempt to recast the FWD in the ’835 patent IPR as different than what Judge Gilliland already considered is nonsense. At bottom, MediaTek seeks for this Court to defer to the PTAB’s construction – a construction that is wrong and based on flawed logic. But MediaTek has it backwards. This Courts owes no deference to the PTAB. The Court has already construed the “storage” terms considering the same arguments MediaTek makes here. It doesn’t need to reconsider them again.

1. The intrinsic evidence supports the Court’s prior construction.

The patents-in-suit disclose only two methods/systems for down-converting a signal: (1) under-sampling (sample-and-hold/voltage sampling); and (2) energy transfer (energy sampling). Though both systems use the same circuit components (e.g., switches, capacitors, loads), their respective operations are very different. *See* Ex. 1, Sections II, III; Ex. 2, Sections II, III; Ex. 3; Sections II, III; Ex. 4 at Section IV; Ex. 5 at Section IV.

To readily distinguish between the capacitors of the two systems, the specification *expressly* distinguishes a “storage” module from a “holding” module. The term “storage” module² is reserved exclusively for a component used in an energy transfer system whereas a “holding” module³ is reserved exclusively for a component used in a sample-and-hold system. *Compare* D.I. 46-2 (“’518 patent”) at 65:56-67:39 (describing an energy transfer system) *with id.* at 53:52-54:36 (describing a sample-and-hold system).

A “storage” module is not simply an element of any type of system. Thus, a “storage” module must be construed in a way that distinguishes it from a “holding” module. As discussed below, the distinctions between a “storage” module in an energy transfer system and a “holding” module in a sample-and-hold system are spelled out in the patent specification. Just like defendants before it, MediaTek (and the PTAB) ignores this.

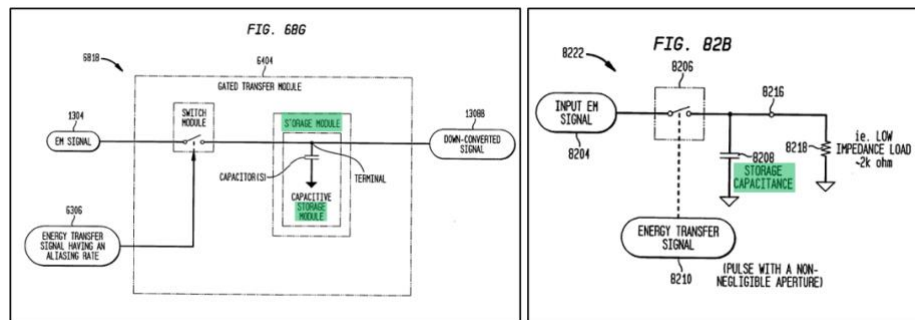
The parties agree that an energy “storage” module “stores non-negligible amounts of energy from an input electromagnetic (EM) signal.” But this feature alone does not distinguish a “storage” module from a “holding” module. There is a key distinguishing feature – the “storage” module is part “of an energy transfer system.” *See, e.g.,* ’518 patent, 62:50-61; 65:56-67:39, 97:14 – 101:67, Figs. 65, 68A-G, 74, 82A, 82B, 95.

² “Storage module” will be used as shorthand for a “storage” element, module, or device.

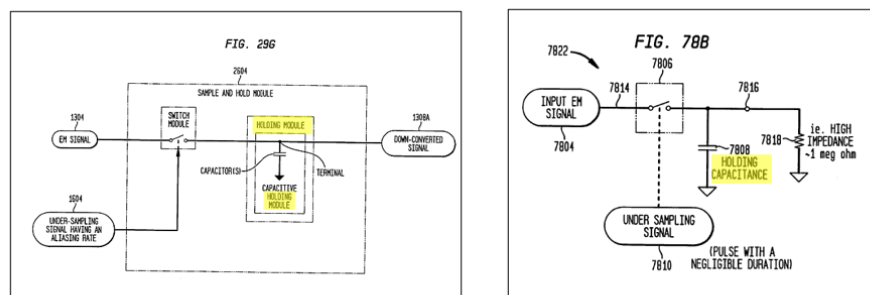
³ “Holding module” will be used as shorthand for a “holding” element, module, or device.

Unlike an energy *transfer* system which, as the name implies, *transfers* (discharges) non-negligible amounts of energy, a sample-and-*hold* system uses a high impedance load to *hold* (i.e., not transfer/discharge) voltage/charge. '518 patent, 63:19-26, 44-59. In other words, whereas a “storage” module stores energy for subsequent transfers/discharges of energy, a “holding” module is “holding a voltage value.” PV 108 Op. Br. at Section III. Thus, a “storage” module is used in an “energy transfer system” and a “holding” module is used in a sample-and-*hold* system. The Court’s prior construction recognizes this important distinction.

Indeed, in addition to the textual description in the specification, this distinction between “storage” and “holding” modules is readily apparent in the patent figures.



Energy transfer system

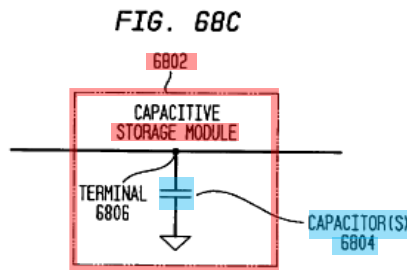


Sample and hold system

For example, as shown in Figures 68G and 82B above, when discussing an energy transfer system, the specification uses the term “storage” module/capacitance (green). *See also* '518 patent at Figs. 65, 68A-G, 74, 82A, 82B, 95. On the other hand, as shown in Figures 29G

and 78B above, when discussing a sample-and-hold system, the specification uses the term “holding” module/capacitance (yellow). *See also id.* at Figs. 24A, 27, 29A-G, 42, 78A, 78B. Thus, ParkerVision’s construction is consistent with this distinguishing feature and recites that the energy “storage” module is part of an “energy transfer system.”

The patent specifications and figures also refer to and identify capacitors *separately* from “storage” modules and “holding” modules. This is because a capacitor can be implemented as either a “storage” module or “holding” module depending on the system that the capacitor is used in and/or how the capacitor is used in the system.



As shown in Figure 68C of the '518 patent, the patentees draw a separate box around capacitor 6804 (blue) and label the box as storage module 6802 (red). This is because Figure 68C is a specific implementation where the capacitor is used as a module of an energy transfer system. Other figures showing a capacitor as a module of a sample-and-hold system, however, include a box around a capacitor labeled as a “holding” module. *See, e.g.,* '518 patent, Fig. 29C.

Moreover, the term “storage” module is first introduced under a sub-section entitled “0.1.2 Introduction to *Energy Transfer*” ('518 patent, 65:56),⁴ which states:

FIG. 82A illustrates an exemplary *energy transfer system* 8202 for down-converting an input EM signal 8204. The *energy transfer system* 8202 includes a switching module 8206 and a *storage module* illustrated as a *storage capacitance* 8208. The terms *storage module* and *storage capacitance*, as used herein, are *distinguishable* from the terms *holding module* and *holding capacitance*, respectively. *Holding modules* and *holding capacitances*, as used above, *identify*

⁴ Unless indicated otherwise, all emphasis has been added.

systems that store negligible amounts of energy from an under-sampled input EM signal with the *intent of ‘holding’ a voltage value*. *Storage modules and storage capacitances, on the other hand, refer to systems* that store non-negligible amounts of energy from an input EM signal.

Id., 66:11-23; *see also id.* at 53:24-58:29 (discussing sample-and-hold systems); 65:56 – 67:39, 97:14-101:67 (discussing energy transfer systems).

The green language in the passage describes a “storage” module in the context of an *energy transfer system*. The passage then provides guidance that allows a POSITA to identify whether a *system* is an energy transfer system or a sample-and-hold system based on what *component* (capacitor) is being used in that system. Specifically, the passage states that “holding” modules “*identify systems*” that store negligible amounts of energy (i.e., sample-and-hold systems) whereas “storage” modules “*refer to systems*” (i.e., identify systems) that store non-negligible amounts of energy. In other words, if a “holding” module is being used, the system is a sample-and-hold system; if a “storage” module is being used, the system is an energy transfer system. The use of the phrase “refer to *systems*” provides a clear indication that the last sentence is not intended to define a “storage” module – a mere *component* of a *system*.

Notably, like other defendants before it, MediaTek does not dispute that a “storage” module is a module found only in an energy transfer system. Indeed, MediaTek provides no *substantive* argument as to why including “*of an energy transfer system*” is wrong. Instead, MediaTek points to the PTAB’s reliance on a single sentence (in red above) and asserts that this one sentence, standing alone, is enough to define the “storage” terms. As Judge Gilliland noted, this ignores the patentee’s full description in the specification. *See* 520 CC Order at 17-20.

2. MediaTek’s construction is technically and legally wrong.

MediaTek (and the PTAB) incorrectly omits the concept that a storage module is a component of an “energy transfer system.” MediaTek’s construction would cover any system in

the world that stored non-negligible amounts of energy.⁵ But the patents are not that broad.

As even the PTAB admitted, (1) there are *only two* systems disclosed in the patent – energy transfer and under-sampling (sample-and-hold), (2) a “holding module” is “expressly link[ed]” to an under-sampling system. D.I. 46-13 (“444 FWD) at 34, 38. Logically, if there are only two systems and a “holding” element is only used in an “under-sampling” system, then a “storage” element must necessarily be “an element *of an energy transfer system*.”

Just like the PTAB and the defendants before it, MediaTek places too much emphasis on this single last sentence (in red above) to the exclusion of the complete disclosure in the specification. But it cannot simply cast aside the distinction the patentee makes between a “storage” and “holding” module and the two distinct systems of which they are a part.

MediaTek claims to be adhering to the patentee’s lexicography, but it is not. The last sentence alone is *not* a lexicographic definition of “storage” module. To act as his/her own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “‘clearly express an intent’ to [define] the term.” *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). That is not the case here. *See* 520 CC Order at 17.

Tellingly, MediaTek modifies the so-called lexicography, changing the word “system” to “module.” This is because the specification makes clear that a “storage” module is not a system, but rather a type of *component* used *within* an energy transfer system. If the single last sentence were true lexicography, there would be no need to make such a modification.

The last sentence is part of the specification’s entire teachings regarding the “storage”

⁵ MediaTek’s construction can lead to illogical results. If a sample-and-hold system had a module that stored non-negligible amounts of energy, under MediaTek’s construction, that module would be a “storage module.” This is at odds with the patent specification, which discloses that sample-and-hold systems use “holding” modules to hold voltage (negligible amounts of energy), *not* “storage” modules.

module. And notably, this last sentence uses the language “*on the other hand*” and “*refer to systems*” as a way to *distinguish* between a “holding” module in contrast to a “storage” module and the two different systems of which they are a part. MediaTek completely ignores this. MediaTek’s reliance on, and misreading of the last sentence (in red above) cannot negate the entirety of the specification’s teachings regarding the “storage” terms.

The specification and figures *repeatedly* compare/contrast energy transfer systems (which use “storage” modules) with sample-and-hold (under-sampling) systems (that use “holding” modules). Indeed, the specification devotes separate sections to compare these different systems. The specification includes a section entitled “0.1 Energy Transfer Compared to Under-Sampling” which, in turn, includes sub-sections “0.1.2 Introduction to *Energy Transfer*” (the section discussing energy transfer systems) and “0.1.1 Review of Under-sampling” (the section discussing sample-and-hold/voltage sampling systems). ’518 patent, 10:49-50; *see also id.* at 62:24-67:39. The sentence that MediaTek relies on for lexicography is found in sub-section “0.1.2 Introduction to *Energy Transfer*” and includes the language “on the other hand” when comparing a storage module to a holding module. Thus, POSITA would understand that the sentence MediaTek relies on is comparative, not definitional.

MediaTek further suggests ParkerVision’s discussion of the phrase “refers to” in discussing lexicography of the term “cable modem” during the ’835 patent IPR establishes lexicography here. Op. Br. at 7. It does not. MediaTek is essentially proposing a rule where “refers to,” regardless of context, always indicates lexicography. That is not the law. One must look at how “refers to” is used. Here, the phrase is “on the other hand, refers to” and the specification makes it clear that it is being used in a *comparative* context. Judge Gilliland recognized this. *See* 520 CC Order at 17. The specification of the ’835 patent, however, is

different because it simply uses “refers to” and is not comparing/contrasting different systems.

Finally, MediaTek (similar to the defendants before it) points to ParkerVision’s proposed construction of “storage module” in IPR2014-00948 from 2014. Op. Br. at 7-8. But as ParkerVision previously explained, that argument actually cuts against MediaTek. As the Court is aware, in 2014, the USPTO used the broadest reasonable interpretation (BRI) standard for construing terms—a different standard than the one federal courts use under *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) and its progeny. Indeed, in 2018, the USPTO eliminated the BRI standard and harmonized the USPTO standard with the standard federal courts use.

MediaTek implies that during the IPR, ParkerVision conceded that the last sentence (in red above) alone is lexicography. But ParkerVision did no such thing. In particular, MediaTek points to ParkerVision’s statement that “[t]he incorporated ’551 Specification explicitly defines a storage module *and draws the distinction* between storage modules and holding modules.” Op. Br. at 6-7 (quoting D.I. 46-14 at 21). Tellingly, MediaTek neglects to mention that when ParkerVision made these statements, ParkerVision’s brief included the same passage quoted above *in its entirety* (’518 patent, 66:11-23), not merely the last sentence in red. In contrast to the PTAB’s 2014 decision under BRI, the standard that federal courts use requires a review of the entire passage *as a whole*, not just the language in the sentence MediaTek relies on.

For the foregoing reasons, the Court should maintain its prior construction.

B. “switch” (’706 patent, claims, 86, 87, 88, 91, 93; ’835 patent, claims 18, 19, 20; ’513 patent, claim 19)

ParkerVision’s Construction	MediaTek’s Construction
Plain-and-ordinary meaning wherein the plain-and-ordinary meaning is “an electronic device for opening and closing a circuit as dictated by an independent control input”	“an electronic device for opening and closing a circuit”

This Court has considered the term *multiple* times. Each time, the Court rejected the

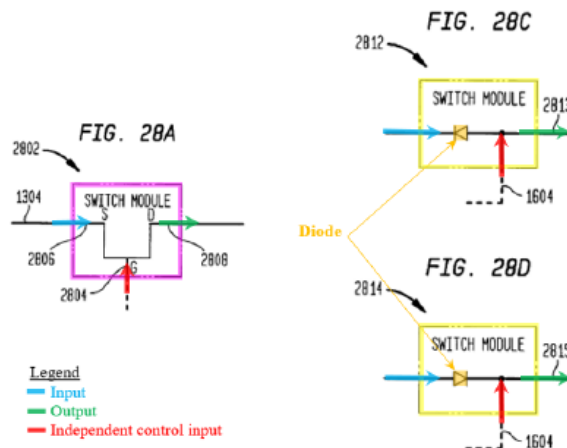
construction that MediaTek proposes here and adopted ParkerVision's construction. *See* 108 CC Order at 7; Amended 562 CC Order at 3; Special Master's Rec. at 108; 520 CC Order at 32.

With prior defendants already exhausting all arguments, MediaTek grasps at straws. MediaTek disingenuously (and without explanation) suggests that the Court using its prior construction would complicate the proceeding and introduce ambiguity into the claim language. *See* Op.Br. at 8-10. Not so. The intrinsic evidence is clear and supports the language "as dictated by an independent control input." *See* PV 108 Op. Br. at 19-20; Ex. 6 ("PV 108 Resp. Br.") at 12-14.

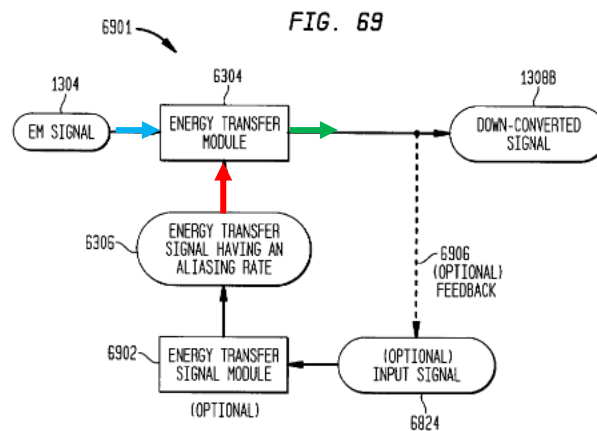
Indeed, this Court is not the first court to adopt the language "as dictated by an independent control input" when defining a "switch" in ParkerVision's patent. The Orlando district court also used this language and rejected the same types of arguments MediaTek raises for omitting the language.⁶ D.I. 46-15 at 25-33. MediaTek attempts to downplay the relevance of the Orlando Court's construction, arguing "ParkerVision's construction...does not line up with its specific arguments before Judge Byron." *see* Op. Br., 9-10. But that is just a bare assertion.

MediaTek faults this Court for failing to consider Figures 28C and 69 of the '518 patent. Op. Br., 10. But this Court did, in fact, consider arguments specific to Figure 28C in the Intel-108 case. *See* PV 108 Resp. Br. at 12-13. MediaTek must have missed this. Nevertheless, Figures 28C and 69 further support including "as dictated by an independent control signal."

⁶ In the Orlando Court (Case No. 6:14-cv-687), the parties disputed the meaning of the term "switch" with regard to U.S. Patent No. 6,091,940. The '940 patent discloses the same type of technology as set forth in the patents-in-suit. Consistent with this Court's prior construction, the Orlando Court construed "switch" to be a "device with an input and output that can take two states, open and closed, *as dictated by an independent control input*." D.I. 46-15 at 33.



As shown in Figures 28C and 28D (above right), the “diode switch” (which the patent identifies as the entire yellow box) has three ports – an input (blue arrow), an output (green arrow) and an independent control input (a second input port) (red arrow).⁷ It is the “independent control input” (red arrow) that causes the opening and closing of the circuit. Indeed, this configuration is similar to Figure 28A (above left) and Figure 28B, the only other types of switch module (purple box) shown and described in the specification.



⁷ MediaTek asserts that it is not clear what an “independent control input” is independent from. Op. Br., 9. But as shown in Figures 28A, C, D, the independent control input is a second *input* (red arrow) that is independent from the *input* signal (blue arrow).

Similar to Figures 28A, 28C, and 28D, the energy transfer module 6304 (which includes a switch) has three ports – an input (blue arrow), an output (green arrow) and a control input (a second input) (red arrow), which is *independent* from the input (blue arrow). To distract from this, MediaTek makes an argument based on the Optional Feedback 6906 of Figure 69. But this is a red herring. Specifically, MediaTek asserts that the Optional Feedback 6906 shows some alleged dependence between the control input and the input or output of the energy transfer module 6304. Op. Br., 9-10. Even if MediaTek were correct (which it is not), it does not change the fact that there is a second input (red arrow) (i.e., an *independent* control input) coming into the switch. In other words, even if a signal from the output (green) of the energy transfer module 6304 is fed back into signal module 6902, the second input (red) is still independent of the input (blue). Nevertheless, the specification makes it clear that the Optional Feedback 6906 (which is the same signal as down-converted signal 1308B) is a separate/independent signal from the EM signal 1304 (blue arrow) and the energy transfer signal 6306 (red arrow): “the down-converted signal 1308B is used as the feedback 6906 to control the frequency and phase relationship between the EM signal 1304 and the energy transfer signal 6306.” ’518 patent, 107:63-66.

Moreover, consistent with the figures above, the claims themselves demonstrate that the “switch” must have an “independent control *input*.” Claim 50 of the ’518 patent recites “a pulse generator coupled to said switch.” A pulse generator is a controller that creates the control signal that is sent to the switch. Similarly, the ’513 patent discloses an *input control* signal that is coupled to the switch and that is separate from the input signal (i.e., modulated carrier signal/RF signal (blue arrow)): “down-converts said *modulated carrier signal* according to said first *control signal*.” ’513 patent, claim 19. Indeed, it was this type of language that the Orlando court relied on in construing “switch”/ “switch module” to include “as dictated by an independent control input.” D.I. 46-15 at 32 (“a switch module having a first input connected to a bias signal, a control input connected to a

control signal”) (emphasis in original).

For the foregoing reasons, the Court should maintain its prior construction.

C. “harmonic[s]” (’706 patent, claims 8, 19; ’518 patent, claim 1)

ParkerVision’s Construction	MediaTek’s Construction
<p>Harmonic: “A sinusoidal component of a periodic wave that has a frequency that is an integer multiple of the fundamental frequency of the periodic waveform and including the fundamental frequency as the first harmonic”</p> <p>Harmonics: “A frequency or tone that, when compared to its fundamental or reference frequency or tone, is an integer multiple of it and including the fundamental frequency as the first harmonic”</p>	<p>Harmonic: “A sinusoidal component of a periodic wave that has a frequency that is an integer multiple of the fundamental frequency of the periodic wave”</p> <p>Harmonics: “Sinusoidal components of a periodic wave each of which have a frequency that is an integer multiple of the fundamental frequency of the periodic wave”</p>

This Court has considered these terms in *multiple* cases. *See* Amended 562 CC Order at 6; 520 CC Order at 31; Special Master’s Rec. at 105. As ParkerVision previously argued, harmonic/harmonics should be construed to include the fundamental frequency as a first harmonic in part because: (1) the lexicography in the specifications demonstrates that the “fundamental frequency” is a “harmonic;” and (2) every waveform has a first harmonic (fundamental frequency) as well as additional harmonics (second harmonic, third harmonic, and so on) whose frequencies are a function of the first harmonic (fundamental frequency). *See* Ex. 7 (“PV 562 Op. Br.”) at 12-17; Ex. 8 (“PV 562 Reply Br.”) at 15-17.

MediaTek does not explain why the Court got it wrong. Instead, MediaTek merely proposes the *same* construction and incorporates by reference the *same* arguments that the Court already *rejected* in prior litigations. *See* Op. Br. at 11-12.

For the foregoing reasons, the Court should maintain its prior construction.

D. “under-sampling” (’706 patent, claims 8, 9, 19)

ParkerVision’s Construction	MediaTek’s Construction
“sampling at an aliasing rate” or “sampling at	“sampling at less than or equal to twice the

less than or equal to twice the frequency of the input signal”	frequency of the input signal”
--	--------------------------------

This Court has considered the term in *multiple* cases. In those cases, the Court rejected the same arguments that MediaTek makes here and adopted ParkerVision’s construction. *See* Amended 562 CC Order at 3; Special Master’s Rec. at 104; 520 CC Order at 30. “Sampling at an aliasing rate” (which is included in the Court’s prior constructions) is proper because it tracks both the lexicography provided in the patent specifications, and MDPL’s prior construction of the term. *See* PV 108 Op. Br. at 27-28; PV 108 Resp. Br. at 20-22.

Under the guise of simplifying issues for the jury (Op. Br. at 12), MediaTek proposes a construction that is a *portion* of the Court’s prior construction. It does so because it believes this will afford it the best opportunity to support its defenses. A jury, however, is perfectly capable of applying the Court’s prior construction for this term in view of the testimony and evidence at trial. For the foregoing reasons, the Court should maintain its prior construction.

E. “A cable modem for down-converting an electromagnetic signal having complex modulations” (’835 patent, claim 1)

ParkerVision’s Construction	MediaTek’s Construction
The preamble is limiting.	Only the portion of the preamble reciting “an electromagnetic signal having complex modulations” is limiting.

The parties agree that the phrase “an electromagnetic signal having complex modulations” in the preamble is limiting. *See* Op. Br. at 13-14. But the parties disagree as to whether “cable modem” is limiting. Though ParkerVision recognizes that this Court previously found “cable modem” to be non-limiting, ParkerVision respectfully requests the Court to reconsider its construction for the reasons discussed below.

First, the term “[a] cable modem” in the preamble of claim 1 provides antecedent basis for “the cable modem” in dependent claims 16 and 17. *See In re Fought*, 941 F.3d 1175, 1178

(Fed. Cir. 2019) (“[T]he Federal Circuit has repeatedly held a preamble limiting when it serves as antecedent basis for a term appearing in the body of a claim.”).

Second, the recitation of “cable modem” in claim 1 is necessary to understand the subject matter encompassed by the claim, which otherwise generally recites circuitry for down-converting a signal. “Cable modem” does not merely state a name or a use for the claimed circuitry. Instead, “cable modem” describes a “fundamental characteristic of the claimed invention” that informs a person of ordinary skill in the art as to the structure required by the claim. *Poly-Am., L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004). As the name suggests, a “modem” is a device that performs both *modulation* and *demodulation* of analog carrier signals. A modem is a transceiver (i.e., a component that operates as a receiver and transmitter). D.I. 46-3 (“’835 patent”), 48:21-41. The use of “modem” in the preamble means that the claim is not limited to merely a receiver, which performs down-conversion. Instead, the claims are directed to a configuration of a receiver that e.g., can operate along with a transmitter so that there is no interference between the receiver and transmitter.

Third, the intrinsic record underscores the importance of “cable modem” and its role as a limiting feature. *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1357-58 (Fed. Cir. 2012). Indeed, the specification is replete with references to the invention as a “cable modem.” The title of the ’835 patent explicitly states that the invention is “[w]ireless and wired cable modem applications....” ’835 patent, 1:1-4. The field of the invention states that the “present invention is “more particularly [related] to wireless and wired applications of cable modems....” ’835 patent, 1:51-54. The specification further makes a clear distinction between “cable modems,” which “refers to [a] modem[] that communicate[s] across ordinary cable TV network cables” and conventional “data modems,” which transmit across phone lines. ’835 patent, 36:19-20.

As such, what makes a modem a “cable” modem relates to the type of physical transmission

line/cabling over which data is ultimately transmitted. Moreover, a POSITA understands that cable modems communicate using specific telecommunications standards and signals and are configured to interoperate with certain electronic components. *See, e.g.*, '835 patent, 36:18-44:57.

For the foregoing reasons, the Court should find the entirety of the preamble to be limiting, including the term “cable modem.”

IV. ADDITIONAL DISPUTED TERMS FOR CONSTRUCTION

A. “delaying said down-converted input samples” ('706, claim 8)

ParkerVision’s Construction	MediaTek’s Construction
Plain and ordinary meaning	“holding said down-converted samples”

Claim 8 of the '706 patent recites “delaying said down-converted input samples.” The language of the term is straightforward. There are no words that are unclear (nor does MediaTek allege there are) and, thus, the term does not require construction.

MediaTek seeks to improperly *re-write* the term by replacing “delaying” with “holding” and “input samples” with “samples.” In particular, MediaTek seeks to narrow the step of “delaying” to a particular type of delaying (i.e., holding) that is performed by a specific type of component (a capacitor). In doing so, MediaTek changes the meaning of the term and *excludes* specification embodiments. It does so merely to protect its defenses in this case.

MediaTek’s purported justification for rewriting the term is that “[t]he '706 patent consistently equates ‘delaying’ a down-converted input sample with ‘holding’ it for a known amount of time.” Op. Br., 15. Not so. MediaTek is simply cherry-picking portions of the specification that support its construction, while *purposefully omitting* others.

Delay modules “delay samples of the input signal 1704 taken by the down-convert and delay module.” D.I. 46-1 (“'706 patent”), 16:33-36. The patent discloses that delay modules can be (1) holding capacitors, or (2) analog delay lines. Ex. 9, ¶ 7. Analog delay lines can perform

the function of delaying samples *without* holding samples and without capacitors. *Id.* Thus, MediaTek’s construction, which limits “delaying” to “holding,” excludes analog delay line embodiments.

Figure 34 of the ’706 patent illustrates an exemplary analog delay line used to implement a delay module. The specification specifically states that “[t]he delay modules 1710, 1722 can also each be implemented using *an analog delay line, such as the analog delay line 3404 in FIG. 34.*” ’706 patent, 35:19-24. The specification then states that “an analog delay line 3404 is constructed using a combination of capacitors, inductors, *and/or* resistors.” *Id.* In other words, a delay line can be configured with just inductors and resistors but *without* any capacitors. Unlike capacitors, inductors and resistors do not hold samples. Ex. 9, ¶ 8. And MediaTek provides no justification to re-write the claims to exclude such embodiments of delay lines.

For the foregoing reasons, the term should be given its plain and ordinary meaning and MediaTek’s construction, which seeks to re-write the term, should be rejected.

B. “in an integrated manner” (’706 patent, claim 19)

ParkerVision’s Construction	MediaTek’s Construction
Plain and ordinary meaning	“in a single, unified manner”

Once again, the language of the term is straightforward. There are no words that are unclear (nor does MediaTek allege there are) and, thus, the term does not require construction. Indeed, MediaTek’s construction “single, unified” injects ambiguity into the claim.

MediaTek’s position ignores how “integrated” is actually used in the specification as it relates to the claim term. For example, the claim language recites “filtering and down-converting an input signal *in an integrated manner.*” Figures 11 and 12 e.g., illustrate a unified downconverting and filtering (UDF) module 1102 that filters and down-converts an input signal. With regard to this module, the specification uses “integrated” synonymously with “combined”:

“the selectivity operation 1202 [of Figure 12] is shown *as being combined or integrated* with the frequency translation operation 1204.” ’706 patent, 13:53-58; 14:40-48. Whereas this makes sense, limiting “integrated” with “single, unified” makes no sense.

Contrary to MediaTek’s assertion, the ’706 patent does not define “integrated” as “single, unified.” MediaTek *randomly* points to the language “a single unified (i.e., integrated) operation.” Op. Br., 16 (quoting ’706 patent, 10:31-33, 14:40-43, 22:24-27). Notably, this language is untethered to how the specification describes what is being claimed. MediaTek then asserts that use of “i.e.” signals an intent to define the word “integrated.” Op. Br., 16. But MediaTek has its backwards – “integrated” is used to describe “single unified,” not the other way around. Though the term “single unified” may be limited to “integrated,” this does not mean that “integrated” is limited to “single unified.” Take the example “a car (i.e., vehicle).” All cars are vehicles but not all vehicles are cars. A vehicle can be a truck or motorcycle; it is not just a car.

For the foregoing reasons, the term should be given its plain and ordinary meaning and MediaTek’s construction should be rejected.

V. TERMS DEFENDANTS ALLEGE ARE INDEFINITE

A. “wherein step (2) is at least partially integral with step (1)” (’706 patent, claim 17)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

The term is not indefinite and should be given its plain and ordinary meaning. Claim 8 recites “A method of filtering and down-converting, comprising the steps of: (1) under-sampling an input signal to produce input samples of a down-converted image of said input signal; (2) delaying said down-converted input samples” Claim 17 further recites “the method of claim 8, wherein step (2) is at least partially integral with step (1).” This simply means that there is a period of time when step (2) can be performed concurrently with step (1).

MediaTek tries to confuse this straightforward concept. MediaTek asserts that “partially integral” is logically incoherent because the dictionary definition of “integral” is “formed as a unit with another part,” and “[e]ither something is formed as a ‘unit’ or it is not.” Op. Br. at 18. But MediaTek improperly reads the term out of context, isolated from the specification.

The specification explains that “partially integral” in this context means that the under-sampling and delaying operations are in part combined or performed “concurrently.”

[T]he input filtering operation performed by the UDF module 1102 is *integrated* with the frequency translation operation. The input filtering operation can be viewed as being performed *concurrently* with the frequency translation operation.

’706 patent at 13:53-58. Accordingly, the term should be given its plain and ordinary meaning.

B. “pulse widths that are established to improve energy transfer from said input signal to said down-converted image” (’706 patent, claim 18)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

This Court has considered this term in *multiple* cases. In those cases, the Court rejected the same arguments that MediaTek makes here and did *not* find the term indefinite. Amended 562 CC Order at 6, 520 CC Order at 40; Special Masters Rec. at 43-46. The Court found that the term should be given its plain and ordinary meaning.

The term is *not* indefinite. Claim 8 of the ’706 patent recites “under-sampling said input signal according to a control signal.” Claim 18, which depends from claim 8, recites that the “control signal comprises a train of pulses having *pulse widths that are established to improve energy transfer* from said input signal to said down-converted image.”

The language “*pulse widths that are established to improve energy transfer*” simply means that pulses having *non-negligible* apertures are being used. Pulses having *non-negligible* apertures “improve” energy transfer. In particular, as discussed below, the specification informs a skilled person to use pulses with non-negligible apertures (which tend away from zero) in order

to “improve” energy transfer instead of pulses that have negligible apertures (which tend towards zero). By using non-negligible apertures, more energy is transferred to a storage device (capacitor) from an input signal than would be transferred by using negligible apertures – hence the language “improve energy transfer.”

As shown, for example, in Figure 53A of the '706 patent below, an aliasing module 5300 (down-convert and delay module) (purple) receives an input signal 5304. The module 5300 includes a switch 5308 (blue) and capacitor 5310 (orange).

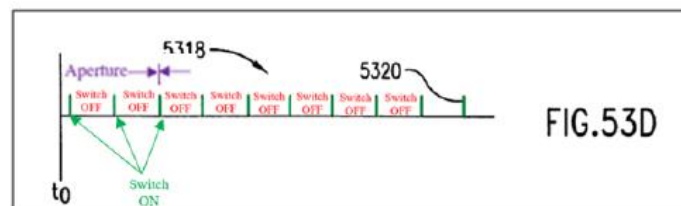
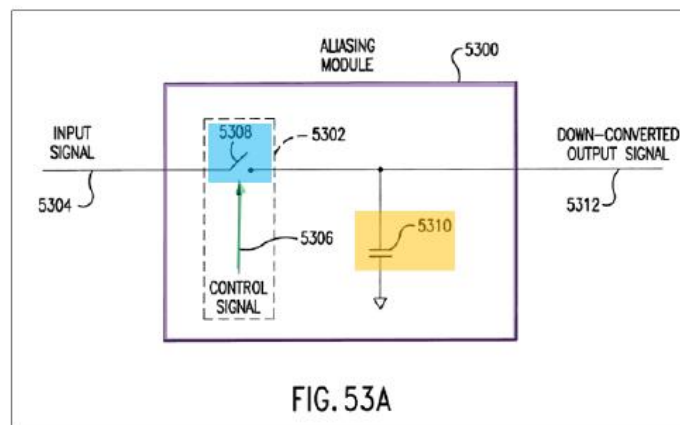


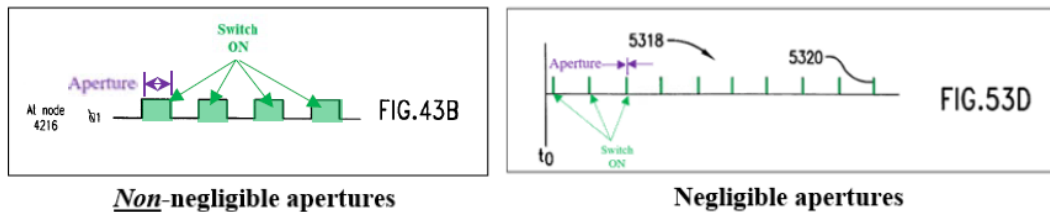
Figure 53D, above, illustrates a control signal 5306 having a train of pulses 5320 (green) “having *negligible* apertures that tend towards zero.” ’706 patent, 29:31-41. The switch 5308 is turned ON (closed) for the time period during which the switch receives a control signal 5306 (green) (during the duration of the aperture (purple)). When the switch is turned ON (closed), energy from the input signal 5304 is transferred to the capacitor 5310. When the control signal stops, the switch is turned OFF (opened) and energy from the input signal 5304 is no longer

transferred to the capacitor 5310. Since the aperture (purple) is very short, only a negligible amount of energy is transferred to the capacitor 5310.

Importantly, the specification provides guidance to a skilled person as to how to improve energy transfer. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014) (“Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention.”). In particular, the specification states that energy transferred is “improved” by using “non-negligible apertures” instead of negligible apertures.

[T]he pulses of the control signal 5306 have non-negligible apertures that tend away from zero....This allows the lower input impedance of the UFT module 5302 to be substantially matched with a source impedance of the input signal 5304. This also improves the energy transfer from the input signal 5304 to the down-converted output signal 5312, and hence the efficiency....

’706 patent, 32:9-18.



As shown in Figure 43B (above left), the pulses (green) with *non-negligible* apertures (purple) have widths that are *greater than* the pulses (green) with negligible apertures (purple) of Figure 53D (above right). Because pulses with *non-negligible* apertures have a *greater width* than pulses with negligible apertures, the switch 5308 is ON (closed) *longer* than it would be if negligible apertures were used. The switch being ON longer results in non-negligible energy being transferred to the capacitor 5310. This is the way in which “pulse widths [] are established to improve energy transfer from said input signal to said down-converted image.”

For the foregoing reasons, the term is not indefinite and should be given its plain and

ordinary. The Court should maintain its prior construction.

C. “wherein said down-converting operation is performed so as to improve energy transfer from said input signal to a down-converted image” (’706 patent, claim 26)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

The term is *not* indefinite. As explained in Section V.B, pulses having *non*-negligible apertures “improve” energy transfer. In particular, the specification discloses using pulses with non-negligible apertures (which tend away from zero) to increase energy transfer, instead of pulses that have negligible apertures (which tend towards zero). By using non-negligible apertures, more energy is transferred to a storage device (capacitor) from an input signal than would be transferred by using negligible apertures – hence, the language “so as to improve energy transfer.” For the foregoing reasons, the term should be given its plain and ordinary.

D. “tend[s] away from zero time in duration” (’518 patent, claim 3; ’706 patent, claims 88, 91, 96)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

The term is *not* indefinite. Claim 88, 91, and 96 of the ’706 patent recite “widening of said apertures of said pulses by a non-negligible amount that *tends away from zero time in duration* to extend the time the switch is closed.” Claim 3 of the ’513 patent recites “generating a train of pulses having non-negligible apertures that *tend away from zero time in duration*.” The disputed term simply means that the widths of pulses controlling a switch are being made wider.

As shown, for example, in Figure 53A of the ’706 patent below, an aliasing module 5300 (down-convert and delay module) (purple) receives an input signal 5304. The module 5300 includes a switch 5308 (blue) and capacitor 5310 (orange).

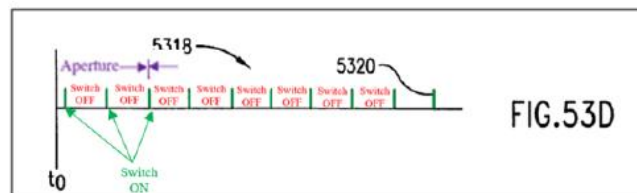
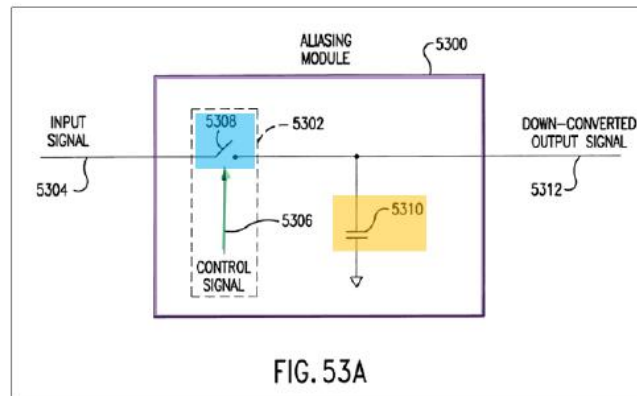
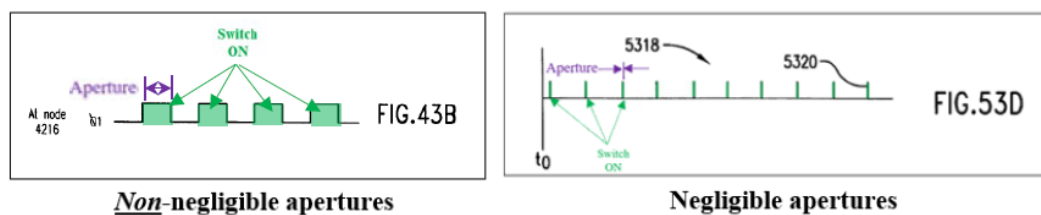


Figure 53D, above, illustrates a control signal 5306 having a train of pulses 5320 (green) “having *negligible* apertures that tend towards zero.” ’706 patent, 29:31-41. The switch 5308 is turned ON (closed) for the time period during which the switch receives a control signal 5306 (green) (during the duration of the aperture (purple)). When the switch is turned ON (closed), energy from the input signal 5304 is transferred to the capacitor 5310. When the control signal stops, the switch is turned OFF (opened) and energy from the input signal 5304 is no longer transferred to the capacitor 5310. Since the aperture (purple) is very short, only a negligible amount of energy is transferred to the capacitor 5310.



As shown in Figure 43B (above left), the pulses (green) with *non-negligible* apertures (purple) have widths that are *greater than* the pulses (green) with negligible apertures (purple) of

Figure 53D (above right). Because pulses with *non-negligible* apertures have a *greater width* than pulses with negligible apertures, the switch 5308 is ON (closed) *longer* than it would be if negligible apertures were used. The switch being ON longer results in non-negligible energy being transferred to the capacitor 5310. This is the way in which “pulse widths [] are established to improve energy transfer from said input signal to said down-converted image.”

For the foregoing reasons, the term is not indefinite and should be given its plain and ordinary meaning.

E. “to extend the time that said switch is closed for a purpose of increasing energy transferred from said input signal” (’706 patent, claim 88, 91, 96)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

The term is *not* indefinite. Claim 86 recites “generating an energy transfer signal comprising a train of pulses, said pulses controlling opening and closing of a switch to transfer energy from said input said.” Claim 88 further recites “widening apertures of said pulses of said energy transfer signal by a non-negligible amount that tends away from zero time in duration *to extend the time that said switch is closed for a purpose of increasing energy transferred from said input signal.*” The language simply refers to the fact that as the pulses controlling a switch are being made wider, the longer a switch is closed and the more energy is being transferred from an input signal through the switch.

In particular, as discussed in Section V.B and V.D, the specification informs a POSITA to use pulses with non-negligible apertures (which tend away from zero) in order to keep the switch closed longer, thus, increasing the amount of energy transferred through the switch. In this way, more energy is transferred to a storage device (capacitor) from an input signal than would be transferred by using negligible apertures. As shown in Figure 43B, the pulses (green)

with *non-negligible* apertures (purple) have widths that are *greater than* the pulses (green) with negligible apertures (purple) of Figure 53D. See figures in Section V.D. Because pulses with *non-negligible* apertures have a *greater width* than pulses with negligible apertures, the switch 5308 is ON (closed) *longer* than it would be if negligible apertures were used. The switch being ON longer results in non-negligible energy being transferred to the capacitor 5310. This is the way in which to “extend the time that said switch is closed for a purpose of increasing energy transferred from said input signal.”

For the foregoing reasons, the term is not indefinite and should be given its plain and ordinary meaning.

F. “a relatively low input impedance path”/ “relatively low impedance load”
(’518 patent, claims 10, 13)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

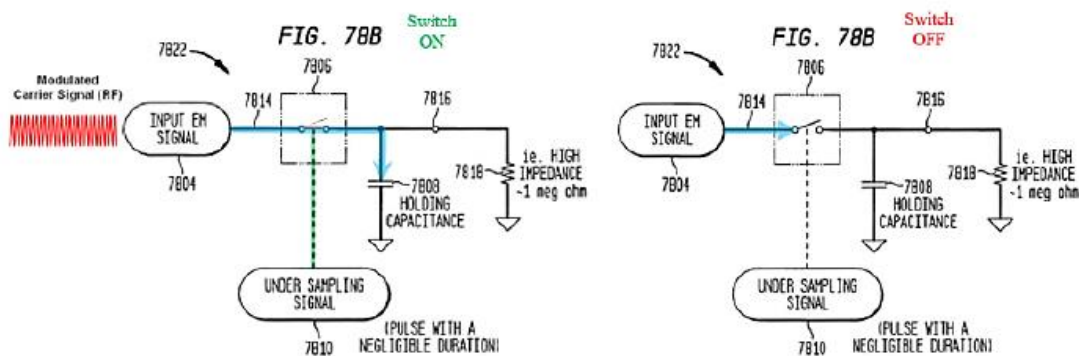
MediaTek saw the term “relatively” and asserted indefiniteness. The terms are *not* indefinite. Claims must be read from the point of view of a POSITA. And the specification does not need to be a book including all of the knowledge that a POSITA already knows. The specification only needs to provide *guidance* (and *objective bounds*) to a POSITA (who can impart his/her own knowledge of circuits) as to what constitutes “a relatively low input impedance path” and “relatively low impedance load.” *See Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014).⁸ The degree may be determined by looking to the functionality obtained by the invention. *See Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1320 (Fed. Cir. 2005).

⁸ The Supreme Court cites with approval *Eibel Process Co. v. Minn. & Ontario Paper Co.*, 261 U.S. 45, 58, 65-66 (1923), where the Court upheld claim language requiring a wire to be placed at a “high” or “substantial” elevation, because “readers . . . skilled in the art of paper making and versed in the use of the . . . machine” would have “no difficulty . . . in determining . . . the substantial [elevation] needed” for the machine to operate as specified. *Nautilus*, 572 U.S. at 910 n.5.

Indeed, the Federal Circuit has explained that “relative terms such as ‘substantially’ do not render patent claims so unclear as to prevent a person of skill in the art from ascertaining the scope of the claim.” *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1359 (Fed. Cir. 2012). Instead, “[a]s long as claim terms satisfy [the Nautilus] test, relative terms and words of degree do not render patent claims invalid.” *One-E-Way, Inc. v. Int’l Trade Comm’n*, 859 F.3d 1059, 1063 (Fed. Cir. 2017). Here, “relatively low” satisfies the *Nautilus* standard because the claim language, in view of the specification, informs a POSITA about the scope of the invention.

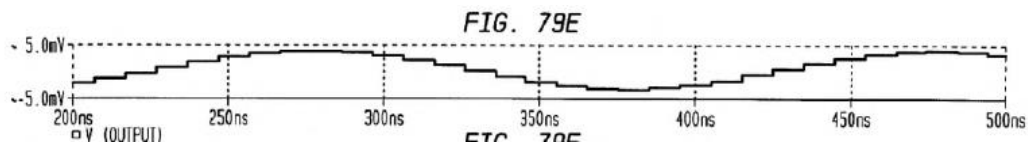
The specification provides guidance and a standard against which to measure “relatively low”: the “relatively low impedance load” must be low enough to allow a path for discharge of “non-negligible amounts of energy” from a storage capacitor. The specifications and figures also provide guidance to a POSITA as to the type of values that would allow or prevent discharge.

In particular, the patent discloses two systems – (1) energy transfer system and (2) sample-and-hold (voltage sampling) system. An energy transfer system uses a low impedance load *relative* to a sample-and-hold system which uses a high impedance load. *See, e.g.*, PV 108 Op. Br. at Sections II, III. PV 870 Op. Br. at Sections II, III; PV 945 Op. Br. at Sections II, III.

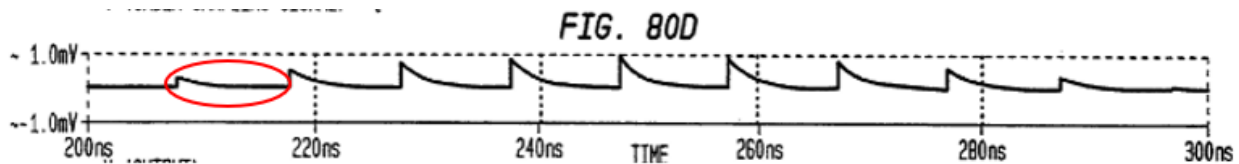


As illustrated in FIG. 78B above, a sample-and-hold system uses a *high* impedance load to down-convert a high frequency input EM signal 7804 (e.g., modulated carrier signal (red)) to a baseband signal. *See id.* When the switch is ON (closed) (during the aperture), the EM signal

8204 (blue) is sent to the “holding” capacitor 7808. When the pulse 7810 (green) stops, the switch is turned OFF (opened). Since sample-and-hold uses a *high* impedance load, when the switch is OFF (opened), there is high resistance to the flow of current and, thus, the “holding” capacitor holds a constant voltage value. Because there is no significant energy discharge between pulses, the terminal 7816 maintains a constant voltage value until the next pulse. As a result, the sample-and-hold system produces a waveform with a stair-step pattern. See FIG. 79E below. The steps being flat demonstrates that voltage is being held.



Unlike a high impedance load, a *low* impedance load causes the capacitor to discharge the stored energy between the pulses of the energy transfer signal (i.e., when the switch is open). Notably, the specification provides clear guidance as to the effects of lowering the impedance of the load in a sample-and-hold system (the voltage sampling system shown in FIG. 78) by replacing the high impedance load with a relatively low impedance load. See '518 patent, 64:6-54.



For example, FIG. 80D (above) illustrates the waveform when the load 7812 is a lower impedance than shown FIG. 79E. As can be seen in FIG. 80D, the stair-step of FIG. 79E disappears, the steps are no longer flat, and there is a discernible droop (e.g., shown in the red circle) in the signal. In this case, the capacitor 7808 is discharged by the presence of the low impedance load. As a result, the capacitor 7808 cannot attain or “hold” the voltage of the input

signal 7804, as was seen in the stair-step of FIG. 79E.

With regard to the term “relatively low input impedance path,” the specification informs a POSITA to use pulses with non-negligible apertures (which tend away from zero) in order to reduce switch impedance and increase energy transfer – instead of pulses that have negligible apertures (which tend towards zero).

Unlike under-sampling signals that have negligible aperture pulses, the energy transfer signal includes *a train of pulses having non-negligible apertures that tend away from zero*. This provides more time to transfer energy from an EM input signal. *One direct benefit is that the input impedance of the system is reduced . . . to further improve energy transfer and thus overall efficiency.*

’518 patent, 65:59-67.

In Figure 43B (Section V.D above), the pulses (green) with *non-negligible* apertures (purple) have widths that are *greater than* the pulses (green) with negligible apertures (purple) of Figure 53D. Because pulses with *non-negligible* apertures have a *greater width* than pulses with negligible apertures, the switch 5308 is ON (closed) *longer* than it would be if negligible apertures were used. The switch being ON longer results in a relatively lower input impedance. *See* ’518 patent, 106:53-38 (discussing how the input impedance seen by the EM signal varies by controlling the aperture width of the energy transfer signal, along with the aliasing rate.) This is the way in which the carrier signal is received through a relatively low input impedance path.

For the foregoing reasons, the term is not indefinite and should be given its plain and ordinary meaning.

G. “a relatively efficient power transfer path” (’518 patent, claims 11, 14)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

Yet again, MediaTek asserts indefiniteness for “relatively.” The term is *not* indefinite. As discussed in Section V.F, claims must be read from the point of view of a POSITA.

Claim 1 of the '518 patent recites “(1) receiving a carrier signal” and claim 11 further recites “wherein step (1) comprises receiving the carrier signal through a relatively efficient power transfer path.” Similarly, claim 14 recites “(5) providing the baseband signal directly to a load through a relatively efficient power transfer path.”

The specification provides guidance as to how to achieve “relatively efficient power transfer”: in order to optimize power transfer through a receiver system, each component should be impedance matched with adjacent components. '518 patent, 24:9-11. Accordingly, a relatively efficient power transfer path is a path in which adjacent components are impedance matched. *See* Section V.F (discussing methods for reducing impedance for practical impedance matching circuits); *see also, e.g.,* '518 patent, 65:59-67.

For the foregoing reasons, the term is not indefinite and should be given its plain and ordinary meaning.

H. “wherein said frequency of said down-converted image is substantially equal to zero” ('706 patent, claim 84)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

MediaTek saw “substantially” and asserted indefiniteness. The term is *not* indefinite. Claim 8 of the '706 patent recites “(1) under-sampling an input signal to produce input samples of a down-converted image of said input signal.” Claim 84 further recites “wherein said frequency of said down-converted image is substantially equal to zero.” MediaTek asserts that it is unclear how a POSITA determines what it means for a frequency to be “substantially equal to zero,” because the specification fails to provide any examples of when such a frequency is no longer “substantially equal to zero.” Op. Br. at 25-26.

In cellular/wireless systems, signals are not perfect. And a frequency may not be exactly

zero. The claims account for this reality. Ex. 9, ¶¶ 10-11. Otherwise, if the claims recited “equal to zero,” infringers would assert that they do not infringe, because their systems do not hit exactly zero. The Federal Circuit recognizes this and has held that the term “substantially” does not require strict numerical boundary, as MediaTek suggests. For example, in *Playtex Products, Inc. v. Procter & Gamble Co.*, the Federal Circuit stated that “substantial” implies “approximate” rather than “perfect.” 400 F.3d at 907 (quoting *Liquid Dynamics Corp. v. Vaughan Co., Inc.*, 355 F.3d 1361, 1368 (Fed. Cir. 2004)). Likewise, in *Ecolab, Inc v. Envirochem Inc.*, the Federal Circuit held “the term ‘substantially’ is a descriptive term commonly used in patent claims to ‘avoid a strict numerical boundary to the specified parameter.’” 264 F.3d 1358, 1367 (Fed. Cir. 2001) (quoting *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211 (Fed. Cir. 1995)). “Expressions such as ‘substantially’ are used in patent documents when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention.” *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002). That is the exact case here. The term ‘substantially,’ as used in this context, denotes approximation.

For the foregoing reasons, the term is not indefinite and should be given its plain and ordinary meaning.

I. “a substantially impedance matched [input] path” (’518 patent, claims 12, 15)

ParkerVision’s Construction	Defendant’s Construction
Plain and ordinary meaning	Indefinite

The same reasons set forth in Section V.H above, the term is not indefinite. For the foregoing reasons, the term is not indefinite and should be given its plain and ordinary meaning.

Dated: November 22, 2023

Respectfully submitted,

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